



HEXACHLOROCYCLOPENTADIENE (HCCPD)

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Agency for Toxic Substances and Disease Registry ToxFAQs

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This fact sheet answers the most frequently asked health questions (FAQs) about hexachlorocyclopentadiene (HCCPD). For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: HCCPD is used in a group of related pesticides, but only two of these are registered for use in the United States. Human data are limited, but it can cause headaches and irritate the nose, throat, eye, and skin. Animal tests suggests that very high levels of HCCPD can cause death. This substance has been found in at least 31 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is hexachlorocyclopentadiene (HCCPD)?

(Pronounced hěks'ə klôr'ō-sī'klə pěn'tə-dī'en)

HCCPD is a manufactured chemical that does not occur naturally. It is a light, lemon-yellow liquid that has a sharp musty odor. It easily evaporates into the air; the vapor looks like a blue haze.

HCCPD is used in the manufacture of certain pesticides. Most of the HCCPD in the environment results from releases during its production and disposal. It is also used to make flame retardants, resins that won't burn, shock-proof plastics, esters, ketones, fluorocarbons, and dyes.

What happens to HCCPD when it enters the environment?

- ☐ HCCPD is released as vapor during manufacture and use.
- ☐ It is broken down quickly by sunlight and reactions with other chemicals in the air.
- ☐ HCCPD doesn't dissolve readily in water.
- ☐ HCCPD in water will evaporate from the surface.
- ☐ About half the HCCPD in water will be changed to other chemicals by light in only 4 minutes.

- ☐ HCCPD that gets into soil binds to decaying plant and animal matter. If the soil is sandy, HCCPD can move through it to reach underground water.
- ☐ About half of the HCCPD in the soil will be changed to other chemicals by bacteria in 1 to 2 weeks.
- ☐ Small amounts of HCCPD can accumulate in fish.

How might I be exposed to HCCPD?

- ☐ By breathing it when you are working with or producing HCCPD.
- ☐ By applying pesticides that contain it.
- ☐ By contact with soils that have recently been treated with the pesticides endosulfan or pentac.
- ☐ By touching it or something that has been contaminated with it.
- ☐ By eating or drinking foods contaminated with HCCPD, but only a small amount will enter your blood stream.

How can HCCPD affect my health?

If you breathe high levels of HCCPD vapors, you may get a sore throat or have shortness of breath and chest discomfort. You may get a headache from breathing HCCPD. Your liver

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and kidneys could also be affected. If HCCPD comes in contact with your skin, it can cause a sore to form.

Animal studies show that when HCCPD is inhaled, it caused bleeding, swelling, and fluid buildup in the lungs. Exposure to large amounts caused breathing difficulty and death. Other studies found that swallowing HCCPD caused lung, liver, kidney, brain and heart damage; most of the animals died during the exposure.

How likely is HCCPD to cause cancer?

There is no information available to show whether HCCPD causes cancer in people. A study in rats and mice did not show an increase in tumors. The EPA has determined that HCCPD is not classifiable as to human carcinogenicity.

How can HCCPD affect children?

Children are unlikely to be exposed to HCCPD. There is no information on the effects in children or adults who were exposed as children.

We do not know if HCCPD causes birth defects in people. Animal studies suggest that it does not cause birth defects or other developmental problems. We do not know if HCCPD can cross the placenta to unborn babies or if it can accumulate in breast milk.

How can families reduce the risk of exposure to HCCPD?

If your doctor finds that you have been exposed to significant amounts of HCCPD, ask if children may also be exposed. When necessary, your doctor may need to ask your state public health department to investigate.

Is there a medical test to show whether I've been exposed to HCCPD?

If you have been recently exposed to HCCPD, your blood and urine can be tested for its presence. Doctors can collect the specimens and send them to special laboratories for testing. These tests can determine whether you have been exposed to HCCPD, but can't determine how much you were exposed to or whether your health will be affected.

Has the federal government made recommendations to protect human health?

EPA has a regulation on how much HCCPD can be present in drinking water. The maximum contaminant level is 50 parts per billion (50 ppb). EPA recommends that exposure in children should not exceed 2 ppm in water for 10-day periods or no more than 0.7 ppm for up to 7 years. EPA requires that spills or accidental releases of 10 pounds or more of HCCPD be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has a permissible exposure limit of 0.01 parts per million (0.01 ppm) in air for an 8-hour workday, 40-hour workweek.

Source of Information

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for hexachlorocyclopentadiene (HCCPD). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Animal testing is sometimes necessary to find out how toxic substances might harm people and how to treat people who have been exposed. Laws today protect the welfare of research animals and scientists must follow strict guidelines.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-639-6359. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html> ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

